

REMARKS

The Official Action mailed December 15, 2006, has been received and its contents carefully noted. This response is filed within three months of the mailing date of the Official Action and therefore is believed to be timely without extension of time. Accordingly, the Applicant respectfully submits that this response is being timely filed.

Claims 1, 3, 11, 13, 16, 18, 26, 28, 32, 34, 37, 39, 42, 44, 45, 47, 50, 52, 53, 55, 58, 60, 69, 71, 74, 76, 77, 79, 82 and 83 were pending in the present application prior to the above amendment. Claims 13 and 16 have been canceled without prejudice or disclaimer. Claims 1, 3, 11, 26 and 28 have been amended to better recite the features of the present invention. Accordingly, claims 1, 3, 11, 18, 26, 28, 32, 34, 37, 39, 42, 44, 45, 47, 50, 52, 53, 55, 58, 60, 69, 71, 74, 76, 77, 79, 82 and 83 are now pending in the present application, of which claims 1, 3, 26 and 28 are independent. For the reasons set forth in detail below, all claims are believed to be in condition for allowance. Favorable reconsideration is requested.

Without a supporting argument in the Detailed Action, the Office Action Summary newly asserts that claim 83 is withdrawn (Box 4a, Paper No. 20061129). The Applicant respectfully disagrees. It appears that claim 83 was inadvertently omitted from a list of elected claims. Specifically, in response to the Official Action mailed October 4, 2005, in the *Amendment and Response to Election Requirement* filed November 4, 2005, the Applicant elected Embodiment 2 and noted that claims 1 and 26 are generic. In the *Amendment*, the Applicant amended claim 83 to depend from claim 77; however, the Applicant inadvertently omitted claim 83 from the list of elected claims. Claim 83 is dependent from claim 77, which is dependent from claim 69, which is dependent from claim 1, which is generic. Therefore, claim 83 should be included in the list of pending claims and is subject to examination. Reconsideration of the withdrawal of claim 83 is respectfully requested.

The Applicant appreciates the Examiner's correction of the page and line citation of the specification correction at page 40, line 16.

Paragraph 3 of the Official Action objects to claims 1, 3, 26 and 28 for various informalities relating to antecedent basis. In response, claims 1 and 3, line 4, and claim 26, line 5, have been amended in accordance with the Examiner's suggestions. Regarding the objections to claims 1, lines 11 and 12, claim 3, lines 10 and 11, claim 26, line 12, and claim 28, line 11, the Applicant has amended the claims to recite sectioning basic units consisting of m rows and n columns by dividing the image into n in the X direction and m in the Y direction and to positively recite n basic units. The Applicant respectfully submits that the features recited in amended claims 1, 3, 26 and 28 have proper antecedent basis. Accordingly, reconsideration and withdrawal of the objections are in order and respectfully requested.

Paragraph 5 of the Official Action rejects claims 11, 13, 16, 28, 44, 52, 60 and 76 under 35 U.S.C. § 112, second paragraph. In response, claim 11 has been amended to recite calculating average values of luminances of n basic units aligned in the X direction per the m rows aligned in the Y direction; obtaining an approximate line from relations between positions in the Y direction and the average values corresponding to the positions in the Y direction; and testing the crystallinity of the semiconductor film, of which the crystallinity is improved, using a fluctuation obtained from relations of the approximate line and the average values of the luminances. That is, claim 11 no longer recites wherein the crystallinity of the semiconductor film is tested by using an average luminance of the digital image. Claims 13 and 16 have been canceled without prejudice or disclaimer. Independent claim 28 has been amended to recite irradiating a visible light on a surface of the substrate and photographing scattered light of the irradiated visible light to produce a photographed image; and digitalizing the photographed image to make a digital image. That is, claim 28 positively recites "a digital image." The Applicant respectfully submits that amended claims 11 and 28 are definite. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 112 are in order and respectfully requested.

Paragraphs 7-14 of the Official Action reject claims 1, 3, 11, 13, 16, 18, 26, 28, 32, 34, 37, 39, 42, 44, 45, 47, 50, 52, 53, 55, 58, 60, 69, 71, 74, 76, 77, 79 and 82 as obvious based on the combination of U.S. Patent No. 6,975,386 to Tsumura, U.S. Patent No. 6,647,148 to Ozawa and U.S. Patent Application Publication No. 2005/0041226 to Tanaka, either alone or in combination with one or more of U.S. Patent Application Publication No. 2004/0228526 to Lin, U.S. Patent Application Publication No. 2003/0142298 to Ujihara and U.S. Patent No. 6,861,614 to Tanabe. The Applicant respectfully traverses the rejection because the Official Action has not made a *prima facie* case of obviousness.

As stated in MPEP §§ 2142-2143.01, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. "The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art." In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000). See also In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

The prior art, either alone or in combination, does not teach or suggest all the features of the independent claims. Independent claims 1, 3, 26 and 28 recite testing the crystallinity of a semiconductor film, of which the crystallinity is improved, using a

fluctuation obtained from relations between an approximate line and average values. For the reasons provided below, Tsumura, Ozawa, Tanaka, Lin, Ujihara and Tanabe, either alone or in combination, do not teach or suggest the above-referenced features of the present invention.

The Official Action concedes that "Tsumura does not include the specifics of how the image discriminator determines locations of the defects" (page 7, Paper No. 20061129) and relies on Ozawa to allegedly cure the deficiencies in Tsumura. The Official Action asserts that "Ozawa teaches ... testing the device surface with a fluctuation obtained from the approximate line and the average of the luminance (column 8, lines 3-20 and Figure 4C)" (pages 7 and 19, Id.). The Applicant respectfully disagrees and traverses the assertions in the Official Action.

Ozawa merely discloses an X0 position having a maximum of added value derived luminance values to specify the boundary line in Figure 4. That is, Ozawa appears to teach electing an X coordinate position of "154" having a position X0 (a peak position) having the maximum of added value derivated luminance values (or a mean value) to specify the boundary line (Figure 4, column 8 lines 3-20). However, Ozawa does not teach or suggest testing the crystallinity of a semiconductor film, of which the crystallinity is improved, using a fluctuation obtained from relations between an approximate line and average values.

Tanaka, Lin, Ujihara and Tanabe do not cure the deficiencies in Tsumura and Ozawa. Tanaka is relied upon to allegedly teach various scanning and measuring functions, Lin is relied upon to allegedly teach various dividing and measuring functions, Ujihara is relied upon to allegedly teach an inspection method and system through inspection of a photographed image, and Tanabe is relied upon to allegedly teach formation of a silicon film and a semiconductor-insulating film interface. However, Tsumura, Ozawa, Tanaka, Lin, Ujihara and Tanabe, either alone or in combination, do not teach or suggest testing the crystallinity of a semiconductor film, of which the

crystallinity is improved, using a fluctuation obtained from relations between an approximate line and average values.

Since Tsumura, Ozawa, Tanaka, Lin, Ujihara and Tanabe do not teach or suggest all the claim limitations, a *prima facie* case of obviousness cannot be maintained. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Furthermore, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Tsumura, Ozawa, Tanaka, Lin, Ujihara and Tanabe or to combine reference teachings to achieve the claimed invention. MPEP § 2142 states that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. It is respectfully submitted that the Official Action has failed to carry this burden. While the Official Action relies on various teachings of the cited prior art to disclose aspects of the claimed invention and asserts that these aspects could be used together, it is submitted that the Official Action does not adequately set forth why one of skill in the art would combine the references to achieve the features of the present invention.

The test for obviousness is not whether the references "could have been" combined or modified as asserted in the Official Action, but rather whether the references should have been. As noted in MPEP § 2143.01, "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (emphasis in original). Thus, it is respectfully submitted that the standard set forth in the Official Action is improper to support a finding of *prima facie* obviousness.

The Official Action concedes that "Tsumura does not include the specifics of how the image discriminator determines locations of the defects" (page 7, Paper No. 20061129) and relies on Ozawa to allegedly cure the deficiencies in Tsumura. The

Official Action asserts that it would have been obvious to combine Tsumura and Ozawa (page 8, Paper No. Id.) and that it also would have been obvious to modify Tsumura and Ozawa based on Tanaka (pages 8-9, Id.). The Applicant respectfully disagrees and traverses the above assertions in the Official Action.

Tsumura is directed to a film quality inspecting method for a polysilicon film. Tanaka is directed to manufacturing a semiconductor device. On the other hand, Ozawa is directed to a positioning method for a magnetic head body for a hard disk device. The Applicant respectfully submits that the Official Action has not demonstrated *prima facie* evidence that one of ordinary skill in the art at the time of the present invention would have been motivated to improve the device of Tsumura or Tanaka based on Ozawa. MPEP § 2141.01(a) states the following:

The examiner must determine what is "analogous prior art" for the purpose of analyzing the obviousness of the subject matter at issue. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). See also In re Deminski, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986); In re Clay, 966 F.2d 656, 659, 23 USPQ2d 1058, 1060-61 (Fed. Cir. 1992).

The Official Action has not shown that Ozawa is in the field of applicant's endeavor or that Ozawa is reasonably pertinent to the particular problem with which the Applicant is concerned. Specifically, the Applicant respectfully submits that a positioning method for a magnetic head body for a hard disk device is not reasonably pertinent to Tsumura or Tanaka or the features of the present invention, and the Official Action has not demonstrated why one of ordinary skill in the art at the time of the present invention would have necessarily looked to Ozawa in order to improve Tsumura or Tanaka.

Lin, Ujihara and Tanabe do not cure the deficiencies in Tsumura and Ozawa. Lin, Ujihara and Tanabe do not teach or suggest why one of ordinary skill in the art at the time of the present invention would have necessarily looked to a reference directed

to a positioning method for a magnetic head body for a hard disk device in order to improve either a film quality inspecting method for a polysilicon film or method of manufacturing a semiconductor device.

Therefore, the Applicant respectfully submits that the Official Action has not provided a proper or sufficient suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify Tsumura, Ozawa, Tanaka, Lin, Ujihara and Tanabe or to combine reference teachings to achieve the claimed invention.

In the present application, it is respectfully submitted that the prior art of record, either alone or in combination, does not expressly or impliedly suggest the claimed invention and the Official Action has not presented a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

For the reasons stated above, the Official Action has not formed a proper *prima facie* case of obviousness. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,



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